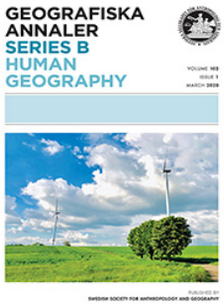

Geografiska Annaler: Series B, Human Geography

ISSN: 0435-3684 (Print) 1468-0467 (Online) Journal homepage: https://www.tandfonline.com/loi/rgab20

Thinking through connections in food and energy transitions

Cecilie Friis & Sören Becker

To cite this article: Cecilie Friis & Sören Becker (2020) Thinking through connections in food and energy transitions, Geografiska Annaler: Series B, Human Geography, 102:1, 1-7, DOI: 10.1080/04353684.2020.1739546

To link to this article: https://doi.org/10.1080/04353684.2020.1739546

GEOGRAFISKA ANNALER: SERIES B, HUMAN GEOGRAPHY
2020, VOL. 102, NO. 1, 1–7
https://doi.org/10.1080/04353684.2020.1739546

Routledge
Taylor & Francis Group

INTRODUCTION

Thinking through connections in food and energy transitions

Cecilie Friis[a,b] and Sören Becker[a,c]

[a]IRI THESys, Humboldt-Universität zu Berlin, Berlin, Germany; [b]Geography Department, Humboldt-Universität zu Berlin, Berlin, Germany; [c]Department of Geography, University of Bonn, Bonn, Germany

ARTICLE HISTORY Received 10 February 2020; Revised 13 February 2020; Accepted 17 February 2020
KEYWORDS Sustainability transition; spatial connections; space; food systems; energy systems; engaged pluralism

Sustainability challenges in food and energy systems

In an era of climate change and escalating global sustainability problems (IPCC 2019; IPBES 2018; UN 2015), there is an urgent need for substantial and sustainable transformation of food and energy systems locally and globally. Accordingly, issues of food and energy provision are featured prominently in the list of the UN Sustainable Development Goals from the central SDG2 Zero Hunger and SDG7 Affordable and Clean Energy to other targets such as SDG11 Sustainable Cities & Communities, SDG15 Life on Land and SDG13 Climate Action. Surely, the provision of both food and energy are considered basic human needs. Yet, the challenge of producing sufficient amounts of healthy food for a growing world population (UN 2019), while limiting the environmental impacts of its production, distribution, consumption and waste is daunting. Likewise, a globally growing energy demand clashes with an energy sector that needs to move away from burning fossil fuels, in order to reduce its significant contribution to global climate change (Bradshaw 2010).

Common for the challenges of sustainability transitions is the globalized nature of the processes of value creation and commodity chains that create, as well as exacerbate the problems in both the food and energy sectors. The domination of agri-food businesses, the expansion of international food retailers, and the 'supermarketization' of food provision in many places reinforce a market concentration that push a culture of mass consumption of industrially produced, highly processed and standard edible commodities 'from nowhere' (McMichael 2009, 147). Even more so, the mere usage of fossil energy sources is a prime condition for accelerating economic circulation, production and consumption across space and scales, enabled by and generating a specific kind of global geopolitics around ensuring access to fossil resources for the global centres of wealth (Huber 2009). With these processes comes substantial externalization of costs and 'dissociation' of hazardous social and environmental effects to distant places (Ibert et al. 2019).

Against this, approaches to creating alternatives, possibly more sustainable food and energy systems often rely on place-based logics. The emergence of eco-consumerism among wealthy (often urban) consumers, for example, points to increasing demand for agro-ecological, quality-audited and localized food supply that can be traced 'to somewhere' (Garrett and Rueda 2019, 131; Watts, Ilbery, and Maye 2005), and there is an increasing attention to 'alternative food networks' based on 'shorter connections between the locale of production and that of consumption' (Rosol 2020, 57). At the same time, the increasing cost of fresh and healthy food creates so-called 'food deserts' in some low-income neighbourhoods of large metropolitan areas, where food provision is reduced to cheap, low quality junk-food (Shannon 2014). Similarly in the energy sector, calls for low-carbon

CONTACT Cecilie Friis cecilie.friis@hu-berlin.de IRI THESys, Humboldt-Universität zu Berlin, Unter den Linden 6, Berlin 10099, Germany

cities and urban energy transitions, as well as community energy projects in both urban and rural environments generally seek to transform energy systems in one place (Bulkeley et al. 2011; Creamer et al. 2018), with a tendency of side-lining links to the sites of production for renewable energies as well as how the vulnerability of some low-income households may become (re)produced through these processes (Bouzarovski et al. 2017; Mulvaney 2014). Calls for sustainability transitions in both food and energy systems thus encounter an apparent mismatch between the prevalence of globalized economic structures producing uneven development and the attention to place and 'the local scale' for developing alternatives.

Thinking through spatial connections in sustainability transition research

It is against the backdrop of this expanding research agenda, that we present this special issue. Our aim is to spark a conversation between different concepts and approaches for understanding and addressing complex, global and uneven spatial connections between seemingly 'distant' places of production and consumption in food and energy systems, and the calls for their transition.

We take our cue from the ongoing debates on the exchange and cross-fertilization between human geography and (sustainability) transition research. Originally drawing on innovation studies and evolutionary economics, the sustainability transition literature seeks to understand long-term changes from one socio-technical configuration to another (Köhler et al. 2019). Attention is often given to how – mostly technological – innovations can grow and become accepted against rigid configurations of technological settings, policies and vested economic interests, also termed 'socio-technical regimes' (Geels 2002). Critique of early transition research was therefore mainly directed to the limitations of a narrow technological focus and sparse recognition of politics, power and practices (Shove and Walker 2007). Lawhon and Murphy (2012, 360) pinpointed this critique by concluding that most of the transition research was 'geographically naive with regard to its conceptualization of space, scale, and the transferability of its insights beyond a narrow range of case-study contexts', while side-lining historically grown patterns of inequality and dependency.

Geographers have since worked to sensitize core concepts in transition research, drawing on the long-standing concern in human geography with uneven spatial developments and power dynamics that may support or impede socio-technical transformations (e.g. Castán Broto and Baker 2018; Werner 2018). This work specifically seeks to advance the conception of the socio-technical regime from a mere focus on national entities, or the tendency to view innovative niches as detached from local conditions (Coenen, Benneworth, and Truffer 2012; Raven, Schot, and Berkhout 2012), by emphasizing the importance of place-specificity to the development of both niches and regimes (Hansen and Coenen 2015). Others demonstrate the interconnections and transnational linkages that are embedded in and facilitate transitions (Wieczorek, Raven, and Berkhout 2015; Hansen and Nygaard 2013), and how these links produce different outcomes in the diffusion of innovations and technologies across the globe (Fuenfschilling and Binz 2018). Through this focus, geographical critique has stressed the need to move beyond the tendency to prioritize specific spatial scales, such as cities or nations, as 'natural' and bounded settings for social processes that delink them 'from the broader territorial formation in which they are currently embedded' (Brenner and Schmid 2015, 157).

Beyond transition research, a multitude of conceptualizations of spatial connections and linkages have emerged from different theoretical and epistemic traditions within geography, including global production networks (Coe, Dicken, and Hess 2008), translocal assemblages (McFarlane 2009) and rural-urban teleconnections and telecoupling in relation to land-use change (Seto et al. 2012; Friis and Nielsen 2019). In the field of energy geography, relational conceptions on space has been foregrounded (Castán Broto and Baker 2018) to emphasize that the focus should be widened from assessing spatial forms and dimensions of e.g. renewable energy technologies to unearthing the underlying social, economic and political relations that produce theirparticular spatial configurations (Huber 2015; Bouzarovski, Bradshaw, and Wochnik 2015; Bridge 2018).

Yet, as noted by Schwanen (2018, 262), the intellectual exchange between human geography and sustainability transition research remains 'partial and asymmetrical', also due to the fact that transition research has evolved into an epistemic community in its own right with dedicated journals and conceptual terminology. With this special issue, we aim to contribute to a cross-fertilization between the two, by examining different concepts and frameworks for exploring spatial links and connections as an entry point for rethinking space in sustainability transitions in food and energy systems.

This special issue: exploring connections between concepts, places and scales

This special issue is the outcome of two conference sessions organized – first, at the Royal Geographical Society's Annual International Conference in Cardiff in 2018 and, then, at the Nordic Geographers Meeting in Trondheim in 2019 – with the aim of bringing together scholars working on spatial connections in food and energy transitions. The central claim underpinning this exploration is that the complexity of both emerging sustainability transitions and their spatial relations necessitates what Sheppard and Plummer (2007, 2545) have termed 'engaged pluralism' – that is open-minded, reflexive exchange and engagement with different analytical approaches (see also Rosenman, Loomis, and Kay 2019; Brenner 2018). The seven papers making up the special issue were therefore selected to deliberately include different epistemological, theoretical and methodological perspectives, as well as a wide range of empirical cases and contexts to address the question of *how to approach spatial linkages in sustainability transitions in food and energy systems?* In combining perspectives on two very different, yet highly interlinked and crucial sectors for sustainability, we hope to spark discussion on new ways of approaching spatiality of transition processes. The papers tackle this question in two ways; by conceptualizing spatial linkages between sites of change in food and energy systems, and by focusing on the linkages between different spatial scales. All of them examine the social, economic and political dynamics producing these linkages.

Reading across the papers, three analytical dimensions of spatial connections can be discerned. First, the papers highlight different *types of connections* denoting the interrelated material and immaterial flows of resources, products, capital technology and knowledge, as well as energy itself that tie spaces together in food and energy systems. Second, the papers show the importance of discerning various *nodes of connections* meaning the physical or institutional channels, networks and hubs that embed different material and immaterial flows, and enable, disrupt or even block connections between places in various contexts. Finally, the papers demonstrate the importance of different *modes of connecting* for understanding *how* spatial connections and relations are produced through and engrained in different (infra)structural settings and social practices. As a suggestion for further research, we think that these three dimensions can demarcate varying territorial extents and scales of food and energy systems, foster a better understanding of these systems and their socio-spatial embeddedness, and help us to understand the spatial dimensions of their current transition.

Identifying types, modes and notes of connections

Thinking in terms of types, nodes and modes of connections allows us to contrast the various conceptual approaches and to enter into a fruitful, engaged pluralist conversation about potential cross-fertilization, as well as areas of contention between approaches. Therefore, the papers are organized to speak to each other across the food and energy sectors.

Hornborg (2019) presents a theoretical framework for analysing the justice implications of energy transitions by focusing on energy technologies as the ultimate link in the transformative process by which space, by means of capital, is converted into energy, and vice versa. The notion of *available energy* is, therefore, 'a relational term that denotes the technologically mediated relation between humans and their environment in a given social context' (2019, 8–20). Hornborg's conception shows us how energy technologies form both important nodes and modes of connecting spaces,

and that all modern energy technologies – including renewable ones – are embedded in logics of spatially uneven development, hence raising important questions of environmental justice.

Hansen and Jakobsen (2020) tackle one of the major challenges for sustainable food systems, namely the escalating increase in meat production and consumption. The authors present a multi-scalar conceptual framework around the concept of *meatscapes* that describe the 'spatial intersection between large-scale geographies of meatification and their everyday articulation in social practice' (2020, 22). Analysing uneven and changing meatscapes in major urban hubs in China and Vietnam, Hansen & Jakobsen demonstrate how their approach lays open different modes of connecting that shape contemporary (un)sustainable transitions in food systems, including international production regimes, historic and contemporary geopolitics, as well as infrastructures such as supermarkets and fast food chains that become important nodes for facilitating specific social practices around food consumption.

Ørtenblad, Larsen, and Suebpongsang (2020) present a case study of changing vegetable supply chains in both traditional wet markets and modern retailers to examine the process of 'supermarketization' in Thailand. Engaging with the *Global Value Chain* framework, Ørtenblad et al. examine actor constellations, trade relationships and spatial connections that create specific and overlapping *spaces of interactions* in these two value chains. This allows them to unpack how the two supply chains are integrally linked through traders and brokers, each of them becoming pivotal nodes in connecting smallholder farmers to both types of markets. Methodologically, Ørtenblad et al. show how mapping value chain segments can identify important nodes of connections that can serve as entry points for interventions for sustainability transition.

Klagge and Nweke-Eze (2020) focus their analysis of renewable energy transitions in Kenya on the process of *financialization*. Engaging critically with the national bias in much of financialization research, they analyse ownership and investor relations between Kenyan energy projects, and investors and donors abroad. Their analysis shows that the mitigation of risk plays a central role for the distribution of financial shares in such projects and that Development Finance Institutions become 'the most important enablers and financiers for these projects in Kenya' (2020, 79), sometimes even carrying the risk of such projects on behalf of investors from the Global North. Thereby, instruments for project finance become nodes for new spatial connections – mainly through facilitation of capital flows, but also through the exchange of knowledge and technologies – with the management of risk being the a main mode of connecting investors to projects, and evaluating which investments are deemed feasible.

Hauer and Nielsen (2020) analyse efforts by the government and its international donors to establish and promote rice cultivation and a national rice market in Burkina Faso. They analyse the configurations of local, national and global connections and disconnections around the co-constitution of rice fields and an emerging rice market by bringing into dialogue the *telecoupling* literature presenting a systemic perspective on the globalization of land-use changes and work on the *geographies of marketization* foregrounding the practices of market-making. Switching conceptual lenses between a systemic and a practice-oriented perspective enables the analysis of the particular configuration of the rice sector in Burkina Faso, and its specific place within the broader global rice ecology. Finally, the attention to co-constitutive practices of land-use change and market-making allows Hauer and Nielsen to identify potentials for more responsible farming practices – in this case, local rice processors that can become important nodes for fostering more socially just and environmentally friendly farming practices.

Sareen and Grandin (2020) uses the case of the European Green Capital award (EGC) and the examples of Oslo (EGC 2019) and Lisbon (EGC 2020) to develop a translocal framework for analysing accountability in urban sustainability transitions. Drawing on urban political ecology and the concept of *translocal assemblages*, they propose to analyse urban sustainability transitions through both the *performative discourses* that shape how policies and initiatives orchestrate, brand or catalyse transition in and between places, and the dislocation of hazardous effects beyond city limits as *telecoupled materiality* that policies (fail to) address. As such, they highlight the role of cities as nodes in

sustainability transitions, producing uneven 'geographies of responsibilities' (Massey 2004) even in policy interventions dedicated to sustainability, such as the EGC.

Finally, the paper by Hasnain (2020) brings attention to the interlinkages between energy and food system transformations by examining how energy supply disruptions influence everyday practices of food consumption among urban middle-class consumers in Islamabad, Pakistan. Hasnain draws on the *food systems* approach to show how international and national political and economic conditions, including for energy supply, change the urban food system; and she discusses how these conditions shape the everyday *food environments* and localized practices of food consumption. This allows her to develop a holistic perspective on food provision that includes the energy requirements for shopping, cooking and eating practices, and to unveil how these influence sustainable and healthy food choices. The paper, hence, underlines the importance of keeping the connections between the consumption of energy and food in mind for an analysis of transitions in either system.

Spatial connections in food and energy transitions

Collectively, the papers in this special issue show the importance of thinking through the diversity of types, nodes and modes of spatial connections when seeking to understand and address the implications of sustainability transitions in food and energy systems. Though diverse in their conceptual perspectives and epistemological angles, they bring to light some cross-cutting insights that can inform scholarship in both transition research and research on food and energy systems more broadly.

First, several papers illustrate the importance of thinking through the connections that tie transitions of food and energy systems together. The production of food that serves as energy for human labour and its spatial requirements are unevenly distributed in both time and space, and the access and availability of various energy sources similarly influence the spatiality of everyday food consumption practices. Second, thinking through spatial connections highlights the pitfalls of a narrow focus on localized or bounded sustainability transition. Even efforts to actively push a transition towards more sustainable practices, such as the European Green Capital, show a tendency to increase externalities and emissions outside the target area of intervention. Carving out those relations and connections, ultimately, enables an evaluation of the potentially contradictory accounts and discourses of such sustainability projects. Fourth, transitions in renewable and alternative, as well as industrial configurations of food and energy systems are interwoven with market-oriented values and standards in for example new food retail chains, while logics of capitalist accumulation and uneven development persist as most evident in the case of meatification.

Finally, the papers in this special issue emphasize that when discussing sustainability transition paying attention to questions of responsibility, accountability and justice is imperative. While revealing that these different kinds of spatial connections cannot stand alone in the effort to foster more sustainable – and just – food and energy systems, we believe that the perspectives presented here enable contextualized and thorough analyses of ongoing transformations, which can serve as a starting point for new alternatives of sustainability transition in particular places and beyond.

Acknowledgements

The idea for this special issue came from thinking across our own work around spatial connections in food systems (Cecilie Friis) and energy transitions (Sören Becker), while working together at the Integrative Research Institute for Transformation of Human-Environment Systems (IRI THESys), Humboldt-Universität zu Berlin. We are grateful for the support and encouragement from the IRI THESys, especially as it has fostered the kind of academic exchange across fields that has motivated this Special Issue. This collection of texts was developed through two conference sessions at first the British Royal Geographical Society's Annual International Conference in Cardiff in 2018 and second at the Nordic Geographers Meeting in Trondheim in 2019. We would like to thank all participants in the two sessions for their engaged discussions and inputs that helped shape the direction and framing of this special issue. Finally, we would like to thank the editors of Geografiska Annaler: Series B, Human Geography, in particular, Brita Hermelin,

for their excellent support throughout the process of putting this Special Issue together. We acknowledge support by the Open Access Publication Fund of Humboldt-Universität zu Berlin.

Disclosure statement

No potential conflict of interest was reported by the author(s).

References

Bouzarovski, S., M. Bradshaw, and A. Wochnik. 2015. "Making Territory Through Infrastructure: The Governance of Natural Gas Transit in Europe." *Geoforum* 64: 217–228.

Bouzarovski, S., S. T. Herrero, S. Petrova, J. Frankowski, R. Matoušek, and T. Maltby. 2017. "Multiple Transformations: Theorizing Energy Vulnerability as a Socio-spatial Phenomenon." *Geografiska Annaler: Series B, Human Geography* 99 (1): 20–41. doi:10.1080/04353684.2016.1276733.

Bradshaw, M. J. 2010. "Global Energy Dilemmas: A Geographical Perspective." *The Geographical Journal* 176 (4): 275–290. doi:10.1111/j.1475-4959.2010.00375.x.

Brenner, N. 2018. "Debating Planetary Urbanization: For an Engaged Pluralism." *Environment and Planning D: Society and Space* 36 (3): 570–590.

Brenner, N., and C. Schmid. 2015. "Towards a New Epistemology of the Urban?" *City* 19 (2–3): 151–182.

Bridge, G. 2018. "The Map is Not the Territory: A Sympathetic Critique of Energy Research's Spatial Turn." *Energy Research & Social Science* 36: 11–20. doi:10.1016/j.erss.2017.09.033.

Bulkeley, H., V. C. Broto, M. Hodson, and S. Marvin. 2011. *Cities and Low Carbon Transitions*. London: Routledge.

Castán Broto, V., and L. Baker. 2018. "Spatial Adventures in Energy Studies: An Introduction to the Special Issue." *Energy Research & Social Science* 36: 1–10.

Coe, N. M., P. Dicken, and M. Hess. 2008. "Global Production Networks: Realizing the Potential." *Journal of Economic Geography* 8 (3): 271–295. doi:10.1093/jeg/lbn002.

Coenen, L., P. Benneworth, and B. Truffer. 2012. "Toward a Spatial Perspective on Sustainability Transitions." *Research Policy* 41 (6): 968–979. doi:10.1016/j.respol.2012.02.014.

Creamer, E., W. Eadson, B. van Veelen, A. Pinker, M. Tingey, T. Braunholtz-Speight, M. Markantoni, M. Foden, and M. Lacey-Barnacle. 2018. "Community Energy: Entanglements of Community, State, and Private Sector." *Geography Compass* 12 (7): e12378. doi:10.1111/gec3.12378.

Friis, C., and J. Ø. Nielsen (Eds.). 2019. *Telecoupling. Exploring land-use change in a globalised world*. UK: Palgrave Macmillan.

Fuenfschilling, L., and C. Binz. 2018. "Global Socio-technical Regimes." *Research Policy* 47 (4): 735–749. doi:10.1016/j.respol.2018.02.003.

Garrett, R., and X. Rueda. 2019. "Telecoupling and Consumption in Agri-food Systems." In *Telecoupling: Exploring Land-use Change in a Globalised World*, edited by C. Friis and J. Ø Nielsen, 115–137. Cham: Springer International Publishing.

Geels, F. W. 2002. "Technological Transitions as Evolutionary Reconfiguration Processes: A Multi-level Perspective and a Case-study." *Research Policy* 31 (8): 1257–1274. doi:10.1016/S0048-7333(02)00062-8.

Hansen, T., and L. Coenen. 2015. "The Geography of Sustainability Transitions: Review, Synthesis and Reflections on an Emergent Research Field." *Environmental Innovation and Societal Transitions* 17: 92–109. doi:10.1016/j.eist.2014.11.001.

Hansen, A., and J. Jakobsen. 2020. "Meatification and Everyday Geographies of Consumption in Vietnam and China." *Geografiska Annaler: Series B, Human Geography* 102 (1): 21–39. doi:10.1080/04353684.2019.1709217.

Hansen, U. E., and I. Nygaard. 2013. "Transnational Linkages and Sustainable Transitions in Emerging Countries: Exploring the Role of Donor Interventions in Niche Development." *Environmental Innovation and Societal Transitions* 8: 1–19. doi:10.1016/j.eist.2013.07.001.

Hasnain, S. 2020. "Disrupted Food Environments in Pakistan: Connections and Disruptions in the Consumer Experience." *Geografiska Annaler: Series B, Human Geography* 102 (1): 118–133. doi:10.1080/04353684.2020.1718526.

Hauer, J., and J. Ø. Nielsen. 2020. "Making Land-use Change and Markets: The Global-local Entanglement of Producing Rice in Bagré, Burkina Faso." *Geografiska Annaler: Series B, Human Geography* 102 (1): 84–100. doi:10.1080/04353684.2020.1723121.

Hornborg, A. 2019. "Energy, Space, and Movement: Toward a Framework for Theorizing Energy Justice." *Geografiska Annaler: Series B, Human Geography* 102 (1): 8–20. doi:10.1080/04353684.2019.1682939.

Huber, M. 2009. "Energizing Historical Materialism: Fossil Fuels, Space and the Capitalist Mode of Production." *Geoforum* 40 (1): 105–115. doi:10.1016/j.geoforum.2008.08.004.

Huber, M. 2015. "Theorizing Energy Geographies." *Geography Compass* 9 (6): 327–338.

Ibert, O., M. Hess, J. Kleibert, F. Müller, and D. Power. 2019. "Geographies of Dissociation: Value Creation, 'Dark' Places, and 'Missing' Links." *Dialogues in Human Geography* 9 (1): 43–63. doi:10.1177/2043820619831114.

IPBES. 2018. *Summary for Policymakers of the Assessment Report on Land Degradation and Restoration of the Intergovernmental Science-policy Platform on Biodiversity and Ecosystem Services.* Edited by R. Scholes, L. Montanarella, A. Brainich, N. Barger, B. ten Brink, M. Cantele, B. Erasmus, et al., 44. Bonn: Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES).

IPCC. 2019. *Climate Change and Land. An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems*. IPCC Special Reports. Summary for Policy Makers. Intergovernmental Panel on Climate Change.

Klagge, B., and C. Nweke-Eze. 2020. "Financing large-scale renewable-energy projects in Kenya: investor types, international connections, and financialization." *Geografiska Annaler: Series B, Human Geography* 102 (1): 61–83. doi:10.1080/04353684.2020.1729662.

Köhler, J., F. W. Geels, F. Kern, J. Markard, E. Onsongo, A. Wieczorek, F. Alkemade, et al. 2019. "An Agenda for Sustainability Transitions Research: State of the Art and Future Directions." *Environmental Innovation and Societal Transitions* 31: 1–32. doi:10.1016/j.eist.2019.01.004.

Lawhon, M., and J. T. Murphy. 2012. "Socio-technical Regimes and Sustainability Transitions: Insights from Political Ecology." *Progress in Human Geography* 36 (3): 354–378. doi:10.1177/0309132511427960.

Massey, D. 2004. "The Responsibilities of Place." *Local Economy* 19 (2): 97–101. doi:10.1080/0269094042000205070.

McFarlane, C. 2009. "Translocal Assemblages: Space, Power and Social Movements." *Geoforum* 40 (4): 561–567.

McMichael, P. 2009. "A Food Regime Genealogy." *The Journal of Peasant Studies* 36 (1): 139–169. doi:10.1080/03066150902820354.

Mulvaney, D. 2014. "Are Green Jobs Just Jobs? Cadmium Narratives in the Life Cycle of Photovoltaics." *Geoforum* 54: 178–186. doi:10.1016/j.geoforum.2014.01.014.

Ørtenblad, S. B., M. N. Larsen, and P. Suebpongsang. 2020. "Multi-dimensional Dynamics and Spatial Connections in Food Retail Markets in Thailand." *Geografiska Annaler: Series B, Human Geography* 102 (1): 40–60. doi:10.1080/04353684.2020.1715811.

Raven, R., J. Schot, and F. Berkhout. 2012. "Space and Scale in Socio-technical Transitions." *Environmental Innovation and Societal Transitions* 4: 63–78. doi:10.1016/j.eist.2012.08.001.

Rosenman, E., J. Loomis, and K. Kay. 2019. "Diversity, Representation, and the Limits of Engaged Pluralism in (Economic) Geography." *Progress in Human Geography*. doi:10.1177/0309132519833453.

Rosol, M. 2020. "On the Significance of Alternative Economic Practices: Reconceptualizing Alterity in Alternative Food Networks." *Economic Geography* 96 (1): 52–76. doi:10.1080/00130095.2019.1701430.

Sareen, S., and J. Grandin. 2020. "European Green Capitals: Branding, Spatial Dislocation or Catalysts for Change?" *Geografiska Annaler: Series B, Human Geograph* 102 (1): 101–117. doi:10.1080/04353684.2019.1667258.

Schwanen, T. 2018. "Thinking Complex Interconnections: Transition, Nexus and Geography." *Transactions of the Institute of British Geographers* 43 (2): 262–283. doi:10.1111/tran.12223.

Seto, K. C., A. Reenberg, C. G. Boone, M. Fragkias, D. Haase, T. Langanke, P. Marcotullio, D. K. Munroe, B. Olah, and D. Simon. 2012. "Urban Land Teleconnections and Sustainability." *Proceedings of the National Academy of Sciences* 109 (20): 7687–7692. doi:10.1073/pnas.1117622109.

Shannon, J. 2014. "Food Deserts: Governing Obesity in the Neoliberal City." *Progress in Human Geography* 38 (2): 248–266. doi:10.1177/0309132513484378.

Sheppard, E., and P. Plummer. 2007. "Toward Engaged Pluralism in Geographical Debate." *Environment and Planning A* 39 (11): 2545–2548.

Shove, E., and G. Walker. 2007. "Caution! Transitions Ahead: Politics, Practice, and Sustainable Transition Management." *Environment and Planning A: Economy and Space* 39 (4): 763–770. doi:10.1068/a39310.

UN. 2015. *Transforming our World. The 2030 Agenda for Sustainable Development*, 53. New York: United Nations.

UN. 2019. *World Population Prospects 2019: Highlights*. Population Division, Department of Economic and Social Affairs, United Nations.

Watts, D. C. H., B. Ilbery, and D. Maye. 2005. "Making Reconnections in Agro-food Geography: Alternative Systems of Food Provision." *Progress in Human Geography* 29 (1): 22–40. doi:10.1191/0309132505ph526oa.

Werner, M. 2018. "Geographies of Production I: Global Production and Uneven Development." *Progress in Human Geography*. doi:10.1177/0309132518760095.

Wieczorek, A. J., R. Raven, and F. Berkhout. 2015. "Transnational Linkages in Sustainability Experiments: A Typology and the Case of Solar Photovoltaic Energy in India." *Environmental Innovation and Societal Transitions* 17: 149–165. doi:10.1016/j.eist.2015.01.001.